CLAIMS

1. Damping device comprising first and second inner parts (1, 2), which are designed to assume a united position in which the parts are rotatable in relation to one another in order to assume different reciprocal torsional positions, and an outer part (6) designed to entirely or partially enclose the inner parts in their united position, **characterized in that** the inner parts (1, 2) comprise sections (1a, 2a), the outer surfaces of which extend partially along a circular cross-section through the inner parts, that the inner parts are designed so that in the said united position they form, together with an inner surface (6a) of the outer part, first and second spaces (12, 13) of sizes that vary as a function of the torsional positions, that the said spaces are or can be connected to one another by one or more connections (15, 16) and that the spaces are designed to enclose one or more media (14), which are or can be transferred via the connection or connections as a function of variations in the sizes of the spaces.

2. Damping device according to Claim 1, **characterized in that** the sections (1a, 2a) have essentially sectoral shapes in the circular cross-section of the inner parts, and that the sections in the respective torsion limit positions are capable of interacting with one another via radially extending parts of the sectoral shape, so that in the first torsion limit position the first space assumes maximum size and the second space assumes zero size and in the second torsion limit position the second space assumes maximum size and the first space assumes zero size.

3. Damping device according to Claim 1 or 2, **characterized in that** the inner parts (1, 2) have cylindrical sections (1b, 2b), to which the sections (1a,

2a) with external surfaces (1a', 2a') extending partially along the circular cross-section are connected, or with which they form a common unit, and that the said sections are provided with stop surfaces (1d, 2f and 1e, 2e), which define the united position of the inner parts.

4. Damping device according to Claim 3, **characterized in that** the cylindrical sections (1b, 2b) are provided with one or more internal ducts, which form or form part of the said connection(s) (15, 16).

5. Damping device according to any of the preceding claims, **characterized in that** the first or the second inner part comprises a guide part extending centrally in the longitudinal direction of the said inner part and capable of interacting with one or more recesses in the second or the first inner part when the parts are brought together into the united position.

6. Damping device according to any of the preceding claims, **characterized in that** the first or second inner part comprises a bearing part (3) extending centrally in the longitudinal direction of the said inner part and having a circular cross-section, around which bearing part the second or the first inner part can rotate between the various torsional positions.

7. Damping device according to Claim 6, **characterized in that** a tubular or solid part having a circular or round cross-section forms both bearing part and guide part, that the tubular or solid part, by way of its end (3b), is capable of interacting with or can be introduced into a recess in the second or first inner part extending centrally and in the longitudinal direction of the said inner part, and that in performing the torsional function the second or the first inner part interacts with the

tubular or solid part via a centrally arranged longitudinal recess.

8. Damping device according to any of the preceding claims, **characterized in that** the connection(s) comprise(s) a passage (17a) of adjustable medium through-flow area.

9. Damping device according to any of the preceding claims, **characterized in that** the connection(s) comprise(s)one or more valves or needles adjustable by means of a manually actuatable member (18) in order to provide the required medium through-flow via the said valve or needle.

10. Damping device according to any of the preceding claims, **characterized in that** the outer part with inner parts united is connected to two parts (22, 23), moveable in relation to one another, movements of which are to be damped.

11. Damping device according to any of the preceding claims, **characterized in that** the outer part with inner parts united is arranged in a steering tube (7) of a motor cycle, and that the first inner part is connected to an upper steering head linked to the motor cycle frame and the second inner part is connected to a lower steering head linked to a front fork.

12. Damping device according to Claim 11, **characterized in that** the first or second inner part is connected to the upper or lower steering head respectively by way of the outer part (6).

13. Damping device according to any of the preceding claims, **characterized in that** it is provided with pressure generating arrangement (for example 33, 34, 35) which keeps

the medium/oil pressurized on an adjusted value independent of temperature variations in or around the damper.

14. Process for the manufacture of a damping device comprising first and second inner parts (1, 2), which in the united position are rotated in relation to one another in order to assume different reciprocal torsional positions, and an outer part (6) entirely or partially enclosing the inner parts in the united position, **characterized in that**

a) a machined solid or tubular rod having a circular cross-section is divided in its longitudinal direction into two rod parts (24, 25),

b) the rod parts are shaped with first sections (1a, 2a), external surfaces (1a', 2a') of which extend partially along the circular cross section, and with solid or tubular second sections (1b, 2b) of circular cross-section essentially corresponding to the cross-section of the rod, and that the rod parts can be partially used as the said first and second outer parts,

c) the first and second inner parts are assigned to the united position,

d) prior to, following or simultaneously with the manufacture of the inner parts, the outer part (26) is manufactured or designed with an internal recess (26a) having a circular cross-section, which corresponds with substantial accuracy to the circular external dimensions of the inner parts,

e) the united inner parts are fitted into the internal recess in the outer part, thereby forming the spaces which vary as a function of the reciprocal torsional

positions of the inner parts between the first and second sections and the recess wall (26a) of the outer part.

f) one or more media (14) are introduced (confined) in the spaces and transferred via one or more connections (15, 16) between the spaces as a function of the assigned reciprocal torsional positions of the inner parts.

15. Process according to Claim 14, **characterized in that** the first or second rod part is provided with a bearing part arranged centrally in the longitudinal direction of the rod part, around which bearing part the second or the first rod part is rotated under imparted reciprocal torsional movements of the inner parts, the second or the first rod part being provided with a longitudinal recess or depression for the bearing part.

16. Process according to Claim 14 or 15, **characterized in that** the bearing part is designed with a front part which serves as guide part when the inner parts are telescoped into the united position, and that the second or the first inner part is designed with a recess capable of interacting with the said guide part.

17. Use of machined solid or tubular rod parts (24, 25), **characterized in that** the rod parts are used for the production of rotatable first and second inner parts, forming part of a damping device, which are enclosed by an outer part (26) in order to form spaces for medium, the sizes of which spaces vary as a function of the reciprocal torsional positions of the inner parts.